

REMARKS-General

1. The newly drafted independent claims 7 and 13 incorporate all structural limitations of the original claim 1 and include further limitations previously brought forth in the disclosure. No new matter has been included. All new claims 7-22 are submitted to be of sufficient clarity and detail to enable a person of average skill in the art to make and use the instant invention, so as to be pursuant to 35 USC 112.

Regarding to Rejection of Claims 1-4 under 35USC102

2. Pursuant to 35 U.S.C. 102, "a person shall be entitled to a patent unless:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

In view of 35 U.S.C. 102(b), it is apparent that a person shall not be entitled to a patent when his or her invention was patent in this country more than one year prior to the date of the application for patent in the United States.

3. However, the Bigio patent and the instant invention are not the same invention according to the fact that the independent claims 6, 15 and 18 of the Bigio patent do not read upon the instant invention and the independent claims 7 and 13 of the instant invention does not read upon the Bigio patent too. Apparently, the instant invention, which discloses a back-lighted control and protection device which comprises a sensor unit to detect the light intensity of the lamp for cutting off the high-voltage supply thereof, should not be the same invention as the Bigio patent which discloses back-lighted assembly.

4. Bigio fails to anticipate the distinctive features of:

(i) a light source detection unit for detecting a light intensity of the light source (as claimed in newly drafted claims 7 and 13);

(ii) the light source detection unit sending out a cut off signal when the light source detection unit detects the light intensity of the light source below a predetermined light level (as claimed in newly drafted claims 7 and 13);

(iii) a protection circuit arranged in such a manner that when the protection circuit receives the cut off signal from the light source detection unit, the protection circuit is arranged for simultaneously deactivating the drive circuitry to cut off the high-voltage supply to the light source (as claimed in newly drafted claim 7);

(iv) the light source detection unit sending out the cut off signal to the protection circuit when the light source is malfunctioned that no light is generated therefrom (as claimed in newly drafted claims 8 and 18-22);

(v) a plurality of sensor units for communicating with lamps of the light source respectively, such that each of the sensor units is arranged for detecting the light intensity of the corresponding lamp of the light source (as claimed in newly drafted claims 9-10 and 16-17); and

(vi) the sensor units being electrically connected to the protection circuit such that the protection circuit receives the cut off signal from one of the sensor units for deactivating the drive circuitry when the respective lamp is malfunctioned (as claimed in newly drafted claims 11-12 and 16-17).

5. As disclosed in Bigio's patent, the main objective of the cited art, column 2 lines 15-16, is to extend the life of a cold cathode lamp by using a current control 14 to control the current to the lamp. However, the instant invention provides a back-lighted control and protection device to the high-voltage supply of the driver circuitry when the lamp is malfunctioned or has an open circuit.

6. Bigio merely anticipates (column 2, lines 61-64) the current control 14 will adjust the current to lamp 16 until the luminance value detected by the optical sensor 12 corresponds to the desired luminance at the face of a flat panel display 20. In other words, Bigio merely suggests the optical sensor 12 used as a luminance adjuster that automatically signals the current control 14 to adjust the current to meet the desired luminance of lamp 16 without any mention of any deactivation of the driver circuitry to cut off the high-voltage supply to the lamp so as to protect the driver circuitry. Even though Bigio merely suggests (column 3, lines 1-3) the current control 14 can be designed to prevent excessive lamp currents that could shorten lamp life, the current control 14 is not equivalent to the sensor unit of the instant invention to cut off the high-voltage supply from the driver circuitry simultaneously once the lamp is off. Therefore,

the function of the optical sensor 12 disclosed by the Bigio is different from the sensor unit of the instant invention.

7. In addition, Bigio merely teaches and anticipates in column 3, lines 27-28 that "the current control 22 may also respond to lamp temperature sensor 21 to protect the lamp in cold temperature". In column 4, lines 11-12, Bigio discloses that "temperature sensor 21 may be mounted to the reflector 26 so as to detect ambient operating temperature". The above two sentences are the only description in Bigio regarding to temperature sensor. It is apparent that Bigio fails to teach and anticipate the same recitation and limitation in the instant invention of using the sensor unit to detect the light intensity of the lamp so as to deactivate the drive circuitry to cut off the high-voltage supply when the lamp is malfunctioned or has an open circuit.

8. The applicant respectfully submits that the temperature sensor is not equivalent to the sensor unit of the instant invention wherein Bigio teaches the temperature sensor arranged to obtain lamp temperature information and to provide a signal input to current control 14 to adjust the maximum lamp current accordingly and avoid overdriving the lamp after a cold start or when the ambient temperature is very low. In other words, even though using the temperature sensor taught by Bigio in the instant invention, the temperature sensor cannot cut off the high-voltage supply simultaneously. It is because the lamp temperature will gradually drop in responsive to the ambient temperature when the lamp is malfunctioned or has an open circuit.

9. Bigio never mentions any concept of using a plurality of sensor units to detect the lamps respectively. When one of the lamps is malfunctioned or has an open circuit, the corresponding sensor unit simultaneously sends out the cut off signal to the protection circuit to cut of the high-voltage supply of the driver circuitry. In other words, the lamp temperature cannot be precisely detected by the temperature sensor when one of the lamps is malfunctioned or has an open circuit since the functioning lamps are generating heat. Otherwise, the temperature sensor is not suitable for the LCD incorporating with a plurality of lamps to illuminate the backplate of the LCD. Moreover, while incorporating with the sensor unit, the necessary components of the LCD can be minimized to protect the driver circuitry, so as to simplify the structural design of the LCD.

Response to Rejection of Claims 5-6 under 35USC103

10. The Examiner rejected claims 5-6 over Bigio in view of no other cited art. Pursuant to 35 U.S.C. 103:

“(a) A patent may not be obtained thought the invention is **not identically** disclosed or described as set forth in **section 102 of this title**, if the **differences** between the subject matter sought to be patented and the prior art are such that the **subject matter as a whole would have been obvious** at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.”

11. In view of 35 U.S.C. 103(a), it is apparent that to be qualified as a prior art under 35USC103(a), the prior art must be cited under 35USC102(a)~(g) but the disclosure of the prior art and the invention are not identical and there are one or more differences between the subject matter sought to be patented and the prior art. In addition, such differences between the subject matter sought to be patented **as a whole** and the prior art are obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

12. In other words, the differences between the subject matter sought to be patent as a whole of the instant invention and Bigio which is qualified as prior art of the instant invention under 35USC102(b) are obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

13. However, as recited above, Bigio merely discloses temperature sensor 21 may be mounted to the reflector 26 so as to detect ambient operating temperature. In other words, Bigio does not disclose the electrical configuration of the temperature sensor to detect the lamp temperature in order to provide a signal to the current control 14.

14. Therefore, the difference between Bigio and the instant invention as claimed in newly drafted claims 14 to 15 is not limited to the disclosure of “sensor unit”, but includes the above distinctive features (i) to (vi). In addition, regarding to claims 14 to 15, the instant invention further contains the following distinctive features:

(vii) the protection circuit being electrically coupled to the lamps in series connection (as claimed in newly drafted claim 14); and

(viii) the protection circuit being electrically coupled to the lamps in parallel connection (as claimed in newly drafted claim 15).

15. The applicant respectfully submits that the invention must be considered as a whole and there must be something in the reference that suggests the combination or the modification. See Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984) ("The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination"), In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984), ("The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.") In re Laskowski, 10 U.S.P.Q.2d 1397, 1398 (Fed. Cir. 1989), ("Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, "[t]he mere fact that the prior art could be modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.")

16. In the present case, there is no such suggestion. Bigio fails to suggest the above distinctive features (i) to (viii) as claimed in the instant invention. Applicant believes that for all of the foregoing reasons, all of the claims are in condition for allowance and such action is respectfully requested.

The Cited but Non-Applied References

17. The cited but not relied upon references have been studied and are greatly appreciated, but are deemed to be less relevant than the relied upon references.

18. In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration and withdrawal of the objection are requested. Allowance of claims 7-22 at an early date is solicited.

19. Should the Examiner believe that anything further is needed in order to place the application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Raymond Y. Chan
Reg. Nr.: 37,484
108 N. Ynez Ave.
Suite 128
Monterey Park, CA 91754
Tel.: 1-626-571-9812
Fax.: 1-626-571-9813

CERTIFICATE OF MAILING

I hereby certify that this corresponding is being deposited with the United States Postal Service by First Class Mail, with sufficient postage, in an envelope addressed to "Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on the date below.

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Person Signing: Raymond Y. Chan